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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,433	11/20/2003	Hiroyuki Kubo	M1071.1875	6960

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EXAMINER	
ODOM, CURTIS B	
ART UNIT	**PAPER NUMBER**
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/716,433	KUBO ET AL.	
	Examiner	Art Unit	
	Curtis B. Odom	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinman et al. (U. S. Patent No. 6, 977, 958) in view of Dykstra et al. (U. S. Patent No. 6, 950, 634) .

Regarding claim 1, Hinman et al. discloses a transceiving filter (see Fig. 4) comprising:

a first port connected to the central office (see Fig. 4, elements 416 and 418);

a second port connected to the customer premises (see Fig. 4, elements 426 and 428));

a first downstream transmission path having an amplifier circuit (Fig. 4, block 304, column 7, lines 20-36) for amplifying a reception signal (see Fig. 4, element 414) and at least one reception filter (see Fig. 4, block 302, see column 7, lines 20-36) for allowing a signal in a receive frequency band to pass;

a second upstream transmission path for allowing a transmission signal (see Fig. 4, element 422) to pass;

a first directional hybrid circuit (Fig. 4, block 322) at a first junction of the first transmission path and the second transmission path, the first directional circuit transmitting the

reception signal from the first port toward the second port via the first downstream transmission path as shown in Fig. 4; and

a second directional hybrid circuit (see Fig. 4, block 324) at a second junction of the first transmission path and the second transmission path, the second directional circuit transmitting the transmission signal from the second port toward the first port via the second upstream transmission path as shown in Fig. 4, wherein the first directional hybrid circuit transmits the reception signal input from the first port to the amplifier circuit and transmits the transmission signal from the second transmission path to the first port, and wherein the second directional hybrid circuit transmits the reception signal amplified by the amplifier circuit to the second port and transmits the transmission signal input from the second port to the second transmission path (see Fig. 4).

Hinman et al. does not disclose the first and second hybrid circuits are 90 degree hybrid circuits.

However, Dykstra et al. discloses plurality of 90 degree directional hybrid circuits in a transceiver (see column 2, lines 36-44). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the hybrid circuits of Hinman et al. with the 90 degree hybrid circuits of Dykstra et al. since Hinman et al. states hybrid circuits can improve the transmission of signals (see column 8, lines 26-35).

Regarding claim 2, Hinman et al. discloses a modem (transceiving circuit) connected to the second port at the customer premises (see column 5, lines 1-5). Hinman et al. does not disclose an antenna connected to the first port. However, Dykstra et al. further discloses an antenna (see Fig. 2, antenna) coupled to one of two ports of a transceiving device including

multiple hybrid circuits. It would have been obvious to include this feature to allow compensation for attenuation (see Hinam et al., column 2, lines 29-31) in a wireless modem (transceiver) environment.

Regarding claim 10, Hinman et al. discloses a communication device (see Fig. 4) comprising a transceiving filter which comprises:

a first port connected to the central office (see Fig. 4, elements 416 and 418);

a second port connected to the customer premises (see Fig. 4, elements 426 and 428));

a first downstream transmission path having an amplifier circuit (Fig. 4, block 304, column 7, lines 20-36) for amplifying a reception signal (see Fig. 4, element 414) and at least one reception filter (see Fig. 4, block 302, see column 7, lines 20-36) for allowing a signal in a receive frequency band to pass;

a second upstream transmission path for allowing a transmission signal (see Fig. 4, element 422) to pass;

a first directional hybrid circuit (Fig. 4, block 322) at a first junction of the first transmission path and the second transmission path, the first directional circuit transmitting the reception signal from the first port toward the second port via the first downstream transmission path as shown in Fig. 4; and

a second directional hybrid circuit (see Fig. 4, block 324) at a second junction of the first transmission path and the second transmission path, the second directional circuit transmitting the transmission signal from the second port toward the first port via the second upstream transmission path as shown in Fig. 4, wherein the first directional hybrid circuit transmits the reception signal input from the first port to the amplifier circuit and transmits the transmission

signal from the second transmission path to the first port, and wherein the second directional hybrid circuit transmits the reception signal amplified by the amplifier circuit to the second port and transmits the transmission signal input from the second port to the second transmission path (see Fig. 4) and;

a modem (transceiving circuit) connected to the second port at the customer premises (see column 5, lines 1-5)

Hinman et al. does not disclose the first and second hybrid circuits are 90 degree hybrid circuits and a transceiving antenna connected to the second port.

However, Dykstra et al. discloses plurality of 90 degree directional hybrid circuits in a transceiver (see column 2, lines 36-44). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the hybrid circuits of Hinman et al. with the 90 degree hybrid circuits of Dykstra et al. since Hinman et al. states hybrid circuits can improve the transmission of signals (see column 8, lines 26-35).

Dykstra et al. further discloses an antenna (see Fig. 2, antenna) coupled to one of two ports of a transceiving device including multiple hybrid circuits. It would have been obvious to include this feature to allow compensation for attenuation (see Hinam et al., column 2, lines 29-31) in a wireless modem (transceiver) environment.

3. Claims 3, 4, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinman et al. (U. S. Patent No. 6, 977, 958) in view of Dykstra et al. (U. S. Patent No. 6, 950, 634) as applied to claims 2 and 10, and in further view of Sato et al. (U. S. Patent No. 5, 206, 779).

Regarding claims 3, 4, 11, and 12, Hinman et al. and Dykstra et al. do not disclose a first surge-absorbing filter between the first port and the antenna and a second surge-absorbing filter between the second port and the transceiving circuit.

However, Sato et al. discloses a combined noise filter and surge absorber for electrical and electronic equipment (see column 2, lines 19-21). The noise filter damps voltage noise which exceeds a cutoff frequency while surge absorbers protect circuits from a transient high voltage (see column 1, lines 34-41). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Hinman et al. and Dykstra et al. with the combined noise filter and surge absorber of Sato et al. in order to absorb line surges and filter high-frequency noise (see Sato et al, column 1, lines 8-14).

4. Claims 5 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Hinman et al. (U. S. Patent No. 6, 977, 958) in view of Dykstra et al. (U. S. Patent No. 6, 950, 634) as applied to claims 1 and 10, and in further view of Seagraves (US 2001/0031016).

Regarding claims 5 and 13, Hinman et al. and Dykstra et al. do not disclose one reception filter is provided in the at least one of the first and second hybrid circuits.

However, Seagraves discloses a hybrid circuit including a splitter to filter out undesired signals outside of a desired frequency band (see section 0019). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the hybrids of Hinman et al. and Dykstra et al. with the hybrid of Seagraves in order to filter-out undesired signals.

5. Claims 6-9 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinman et al. (U. S. Patent No. 6, 977, 958) in view of Dykstra et al. (U. S. Patent No. 6, 950,

634) as applied to claims 1 and 10, and in further view of Billingsley et al. (U. S. Patent No. 5, 136, 455).

Regarding claims 6-9 and 14-17, Hinman et al. and Dykstra et al. do not disclose the hybrids are double-stage or three-stage hybrid circuits.

However, Billingsley et al. discloses multi-stage hybrid designs are effective in both filtering of RFI and suppression of transients (see column 3, lines 15-23). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to implement multi-stage hybrids in Hinman et al. and Dykstra et al. as disclosed by Billingsley et al. since Billingsley states multi-stage hybrid circuits attenuate radio frequency interference and transient overvoltages (see column 1, lines 6-10).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Elo (U. S. Patent No. 6, 748, 076) and Plonka (US 2003038874) disclose transceiver circuits with multiple directional hybrids.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Curtis Odom
January 6, 2007